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EXAMINER	
DURNFORD-GESZVAIN, DILLON	
ART UNIT	PAPER NUMBER
2622	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/033,316	AMLING ET AL.	
	Examiner	Art Unit	
	Dillon Durnford-Geszvain	2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 December 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4, 8-11, 13-20, 23-26 and 28-41* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4, 8-11, 13-20, 23-26 and 28-41* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. Claims **1-4, 8-**[redacted]**, 23-26** and **28-41** are pending, claims **1, 9, 14, 15, 23** and **24** are amended and claims **5-7, 21, 22, 27** and **42-48** are cancelled.

Response to Arguments

2. Applicant's arguments filed 12/6/2006 have been fully considered but they are not persuasive.

As to Applicant's arguments regarding claim **1** and **15**, the Applicant argues that Chung et al. is not properly combinable with Ikeda et al. because it states that "data transfer width is set to the word width, which allows a fixed timing relationship between the clock edge and data transfer in both single-ended and differential modes." However, the timing particular to the camera head of Ikeda et al. as cited by the Examiner is information regarding which of NTSC or PAL is used. As discussed in the rejection of claim **1** in the previous Office Action this information regarding the format and timing of the camera head is crucial to the functioning of the camera control unit and does not depend on synchronization signals.

Regarding claims **25** and **34**, the Applicant once again argues that the analog image signal is input to the phase control unit 5. However, as discussed in the Office Action dated 3/29/2006 (see section 3), there is no teaching in Yokoyama that the CCD

signal must be input into the phase controller 5.

The Applicant further argues that the frequency signal CLK would have to be transmitted from the signal processing unit to the camera head. However, the Examiner would like to draw the Applicant's attention to Column 4 lines 50-61 and Fig. 1. Yokoyama clearly shows that the timing generator 64 "halves a frequency of a clock signal (2CLK) which is fed from the signal processing unit 10 and transmits the resultant signal to the SSG 4 as a clock signal (CLK)." It is clear from this teaching that CLK is actually available in the camera head and therefore would not need to be sent from the signal processing unit.

Therefore it would indeed have been obvious to combine Yokoyama with Koide et al. and to further combine this with Takahashi et al. as adding the serializer would have gone further in achieving the stated objective of Yokoyama of minimizing the number of lines between the signal processing unit and the camera head.

The Applicant further challenges the motivation used to combine Yokoyama and Takahashi et al. by alleging that Yokoyama has already addressed the problem and citing Column 2 line 64 to Column 3 line 2. However, Yokoyama simply states that "its first object [is] to provide an image sensing system having a camera head and a signal processing unit connected by **a less** number of lines by transmitting a clock signal, a horizontal synchronizing signal, and a CCD signal via a single lines in time division." In fact this does not address the problem of using a minimum number of conductors but of using less conductors. Combining Yokoyama with Koide et al. and Takahashi et al. would go further in achieving the stated objective of Yokoyama by making it possible to

only transmit digital signals.

Claim Rejections - 35 USC § 103

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. Claims **1, 3, 4, 8-11, 13** and **14** are rejected under 35 U.S.C. 103(a) as being unpatentable over US 6,449,007 (Ikeda et al.) in view of US 6,870,566 (Koide et al.) and US 6,753,901 (Takahashi et al.) and US 6,836,290 (Chung et al.).

As to claim **1**, Ikeda et al. teaches a video imaging system (100 and 140, see fig. 1) comprising: a camera control unit 140 for processing an image signal; a cable SL, connected to said camera control unit 140, for transmitting the image signal to said camera control unit 140; and a camera head 100, connected to said cable SL, for providing the image signal, said camera head 100 including: an imager 103, for generating an analog image signal; a timing generator 108, generating a timing particular to said camera head, the timing signal actuating said imager and sent to said camera control unit 140 (see Column 8 lines 29-48 and note that "the CCD information including (among other information) ... information indicating which, NTSC or PAL[.]" As is well known in the art NTSC operates at 30 fps and PAL operates at 24 fps, this indicates the timing of the camera head and is sent to the control unit, see Column 8 lines 42-46); said camera control unit programmed at least in part upon said timing signal particular to said camera head (see Column8 lines 46-48, note that the "program is suitable for CCD 103" meaning that it is based on the timing of the head, i.e. NTSC or

PAL).

Ikeda et al. does not teach that the camera head includes an A/D converter in the camera head 100, instead the image signal is converted when it reaches the CCU 140 by A/D 151. However, Koide et al. teaches a video imaging system (11 and 12, see Fig. 1) that converts the image signal from analog to digital before transmitting it from the camera head 11 to the camera control unit 12. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to have moved A/D 151 from the CCU 140 to the camera head 100 as the image signal would be converted to a digital signal before being transmitted and this would reduce the effects of noise on the image signal as digital signals are more resistant to noise than analog signals.

Ikeda et al. does not teach that the camera head includes a serializer, however Takahashi et al. teaches an endoscopic imaging system where the video signal is passed through a serializer 26 (see Fig. 2) before being passed on to a display device. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to have included a serializer in the camera head of Ikeda et al. in view of Koide et al. as this would allow for the use of a minimum number of conductors for passing the signal from the camera head to the camera control unit and would thus allow for the cable connecting the two to be made smaller and therefore further easing the discomfort of a person on which the endoscope is being used.

What none of the above teaches is using digital serial drivers and receivers to transmit data from a camera head to a camera control unit. However, Chung et al. teaches an imager utilizing at least one digital serial driver 54 and one digital serial

receiver 56 (Column 2 lines 28-36).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used the digital serial driver taught by Chung et al. to transmit signals in the system taught by Ikeda et al. in view of Koide et al. and Takahashi et al. as this is a low power system that allows for the use of differential signals that are resistant to EMI noise.

As to claim **3**, see the rejection of claim **1** and note that Ikeda et al. further teaches that the camera head further comprises a processor 110.

As to claim **4**, see the rejection of claim **3** and note that Ikeda et al. teaches a memory device, (contained as part of image sensing controller 110) accessible by said processor 110, containing camera head information (Column 8 lines 37-41).

As to claim **8**, see the rejection of claim **1** and note that note that Ikeda et al., Koide et al. and Takahashi et al. have been discussed above. What none of the above teaches is using digital serial receivers to receive data from a camera control unit at a camera head. However, Chung et al. would have considered using a receiver 56 in a camera head if two-way communication between the camera head and camera control unit was desired instead of one-way communication between an imager and an image processor.

Therefore it would have been obvious to one of ordinary skill in the art at the time

the invention was made to have used a receiver as taught by Chung et al. in the camera head as taught by Ikeda et al. in view of Koide et al. and Takahashi et al. as this would provide a lower power and noise resistant form of communication.

As to claim **9**, see the rejection of claim **1** and note that Chung et al. further teaches the driver 54 utilizing Low-Voltage Differential Signals (LVDS) (Column 2 lines 27-37).

As to claim **10**, see the rejection of claim **8** and note that Chung et al. teaches the receiver 56 utilizing LVDS (Column 2 lines 27-37).

As to claim **11**, see the rejection of claim **1** and note that Ikeda et al., Koide et al. and Takahashi et al. have been discussed above. What none of the above teaches is using a digital serial driver in the camera control unit. However, Chung et al. teaches using digital serial drivers and receivers to communicate between an imager and an image processor. If two-way communication were desired, Chung et al. would have considered using digital serial drivers to communicate both ways. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used the digital serial drivers taught by Chung et al. to perform communication between the camera control unit of Ikeda et al. in view of Koide et al. and Takahashi et al. as it is a low power noise resistant form of communication. This would include both communications from the camera head to the camera control unit and from the camera

control unit to the camera head.

As to claim **13**, see the rejection of claim **11** and note that Chung et al. further teaches digital serial drivers utilizing LVDS.

As to claim **14**, see the rejection of claim **1** and note that Chung et al. further teaches digital serial receivers utilizing LVDS.

5. Claim **2** is rejected under 35 U.S.C. 103(a) as being unpatentable over US 6,046,769 (Ikeda et al.) in view of US 6,870,566 (Koide et al.) and US 6,753,901 (Takahashi et al.) and US 6,836,290 (Chung et al.) further in view of US 6,573,931 (Horii et al.).

As to claim **2**, see the rejection of claim **1** and note that what neither Ikeda et al. nor Koide et al. teaches is a multiplexer contained in a camera head which transmits a multiplexed signal including image data and control data. However, Horii et al. teaches a camera head 150 containing a multiplexer 115 for transmitting a multiplexed signal containing image data and control data (Column 2 lines 1-5).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to have added the multiplexer taught by Horii et al. to the video imaging system taught by Ikeda et al. in view of Koide et al. as this would allow for using less wires and would allow for a smaller cable.

6. Claim **15, 19, 23** and **24** are rejected under 35 U.S.C. 103(a) as being unpatentable over US 6,046,769 (Ikeda et al.) in view of US 6,836,290 (Chung et al.).

As to claim **15**, Ikeda et al. teaches a video imaging system (100 and 140, see Fig. 1) comprising: a camera control unit 140 for processing an image signal (CCD OUT); a cable SL, connected to said camera control unit 140, for transmitting the image signal to said camera control unit 140; and a camera head 100, connected to said cable SL, for providing the image signal, said camera head including: an imager 103, for generating the image signal; and a timing generator 108, generating a timing signal particular to said camera head, the timing signal actuating said imager and sent to said camera control unit (see Column 8 lines 29-48 and note that "the CCD information including (among other information) ... information indicating which, NTSC or PAL[.]" As is well known in the art NTSC operates at 30 fps and PAL operates at 24 fps, this indicates the timing of the camera head and is sent to the control unit, see Column 8 lines 42-46); said camera control unit 140 programmed based at least in part upon said timing signal particular to said camera head (see Column8 lines 46-48, note that the "program is suitable for CCD 103" meaning that it is based on the timing of the head, i.e. NTSC or PAL); wherein a plurality of camera heads, each with different timing signals, are attachable to said camera control unit (note that if one head is attachable then another head must necessarily be attachable).

What Ikeda et al. doesn't teach is using digital serial drivers and receivers to transmit data from a camera head to a camera control unit. However, Chung et al. teaches an imager utilizing at least one digital serial driver 54 and one digital serial

receiver 56 (Column 2 lines 28-36).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used the digital serial driver taught by Chung et al. to transmit signals in the system taught by Ikeda et al. in view of Koide et al. and Takahashi et al. as this is a low power system that allows for the use of differential signals that are resistant to EMI noise.

As to claim **19**, see the rejection of claim **15** and note that Ikeda et al. further teaches the video imaging system according to claim **15** wherein said camera head 100 further comprises a processor 110.

As to claims **23** and **24,** Ikeda et al. does not teach using serial drivers and receivers utilizing LVDS as the means for transmitting signals. However, Chung et al. teaches sending signals with a digital serial driver 54 on an imager 50 to a digital serial receiver 56 in an image processor 52 using LVDS. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used digital serial drivers and receivers utilizing LVDS to transmit signals from the camera head to the CCU as LVDS is resistant to EMI and is a low power method of sending signals.

7. Claim **16** is rejected under 35 U.S.C. 103(a) as being unpatentable over US 6,449,007 (Ikeda et al.) in view of US 6,836,290 (Chung et al.) further in view of US 6,870,566 (Koide et al.).

As to claim **16**, see the rejection of claim **15** and note that as discussed above Ikeda et al. does not teach the camera head 100 comprising a converter for converting an analog image signal to a digital image signal. However, as discussed above Koide et al. teaches a video imaging system (11 and 12, see Fig. 1) that converts the image signal from analog to digital before transmitting it from the camera head 11 to the camera control unit 12. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to have moved A/D 151 from the CCU 140 to the camera head 100 as the image signal would be converted to a digital signal before being transmitted and this would reduce the effects of noise on the image signal as digital signals are more resistant to noise than analog signals.

8. Claim **18** is rejected under 35 U.S.C. 103(a) as being unpatentable over 6,046,769 (Ikeda et al.) in view of US 6,836,290 (Chung et al.) further in view of US 6,753,901 (Takahashi et al.).

As to claim **18**, see the rejection of claim **15** and note that what Ikeda et al. does not teach that the camera head includes a serializer, however Takahashi et al. teaches an endoscopic imaging system where the video signal is passed through a serializer 26 (see Fig. 2) before being passed on to a display device. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to have

included a serializer in the camera head of Ikeda et al. as this would allow for the use of a minimum number of conductors for passing the signal from the camera head to the camera control unit and would thus allow for the cable connecting the two to be made smaller and therefore further easing the discomfort of a person on which the endoscope is being used.

9. Claim **17** is rejected under 35 U.S.C. 103(a) as being unpatentable over US 6,046,769 (Ikeda et al.) in view of US 6,836,290 (Chung et al.) further in view of US 6,573,931 (Horii et al.).

As to claim **17**, see the rejection of claim **15** and note that what Ikeda et al. does not teach is a multiplexer for generating a multiplexed signal including an image signal and a control signal. As discussed above in the rejection of claim **2**, Horii et al. teaches a multiplexer for creating a multiplexed signal containing image data and control data. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated the multiplexer taught by Horii et al. into the system taught by Ikeda et al. as this would allow the cable to be thinner as only one line would need to pass through it.

10. Claim **20** is rejected under 35 U.S.C. 103(a) as being unpatentable over US 6,046,769 (Ikeda et al.) in view of US 6,836,290 (Chung et al.) further in view of US 6,638,212 (Oshima).

As to claim **20**, see the rejection of claim **19** and note that what Ikeda et al.

teaches has been discussed above. What Ikeda et al. does not teach is a memory device contained in the camera head and accessible by the processor containing camera head information. However, Oshima teaches an endoscope having a nonvolatile memory 20, contained in the camera head 2 and accessible by processor 21, containing camera head information (Column 6 lines 60-63). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to have added a nonvolatile memory containing camera head information as taught by Oshima to the camera head taught by Ikeda et al. as this would allow the camera head to store such information as the make and model as well as how many times it has been used and who used it.

11. Claims **25** and **28** are rejected under 35 U.S.C. 103(a) as being unpatentable over US 6,449,007 (Yokoyama) in view of US 6,870,566 (Koide et al.) and US 6,753,901 (Takahashi et al.).

As to claim **25**, Yokoyama teaches a video imaging system comprising: a camera control unit 10 for processing a digital image signal; a cable 8, connected to said camera control unit 10, for transmitting the digital image signal to said camera control unit 10; and a camera head 9, connected to said cable 8, for providing the digital image signal, said camera head 9 including: an imager 61, for generating an analog image signal (Column 4 lines 23-35).

What Yokoyama does not teach is the camera head including a converter for converting the analog signal into a digital image signal. However, as discussed above in

the rejection of claim **1** Koide et al. teaches an analog to digital converter 103 in an image sensing unit 11 that converts the image data to digital image data before it is transmitted to a computer 12. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to have moved the analog to digital converter of Yokoyama from the CCU 10 to the camera head 9 as taught by Koide et al. as converting the image data from analog to digital before transmission makes the signal more resistant to noise as digital signals are more resistant to noise than are analog signals.

Yokoyama does not teach that the camera head includes a serializer, however Takahashi et al. teaches an endoscopic imaging system where the video signal is passed through a serializer 26 (see Fig. 2) before being passed on to a display device. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to have included a serializer in the camera head of Yokoyama in view of Koide et al. as this would allow for the use of a minimum number of conductors for passing the signal from the camera head to the camera control unit and would thus allow for the cable connecting the two to be made smaller and therefore further easing the discomfort of a person on which the endoscope is being used.

As to claim **28**, see the rejection of claim **25**, and note that Yokoyama further teaches the video imaging system according to claim **25** wherein said camera head 9 further comprises a processor 1 (Column 4 lines 36-37).

12. Claim **26** is rejected under 35 U.S.C. 103(a) as being unpatentable over US 6,449,007 (Yokoyama) in view of US 6,870,566 (Koide et al.) and US 6,753,901 (Takahashi et al.) as applied to claim **25** further in view of US 6,573,931 (Horii et al.).

As to claim **26**, see the rejection of claim **25** and note that what neither Yokoyama nor Koide et al. in view of Takahashi et al. teach is a multiplexer for generating a multiplexed signal, which includes a digital image signal and control signals. However, as discussed in the rejection of claim **2** above, Horii et al. teaches a camera head 150 with a multiplexer 115 for transmitting a multiplexed signal containing image data and control data (Column 2 lines 1-5).

13. Claims **29-31** are rejected under 35 U.S.C. 103(a) as being unpatentable over US 6,449,007 (Yokoyama) in view of US 6,870,566 (Koide et al.) and US 6,753,901 (Takahashi et al.) as applied to claim **25** and claim **28** further in view of US 6,638,212 (Oshima).

As to claim **29**, see the rejection of claim **28** and note that what none of Yokoyama, Koide et al. or Takahashi et al. teach is the camera head including a memory device, accessible by the processor, containing camera head information. However, as discussed in the rejection of claim **4**, Oshima teaches a memory 20 storing camera head information (Column 6 lines 60-63). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to have added the memory of Oshima to the system taught by Yokoyama in view of Koide et al. and Takahashi et al. as this would allow the camera head to store such information as the

make and model as well as how many times it has been used and who used it.

As to claims **30,** see the rejection of claim **25** and note that what none of Yokoyama, Koide et al. or Takahashi et al. teach is formatting the camera control unit with inputted data. However, Oshima teaches formatting the way that the camera control unit reads the data according to inputted data (Column 29 lines 16-25). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to have added the function of changing the camera control unit settings according to inputted data as taught by Oshima to the video imaging apparatus taught by Yokoyama in view of Koide et al. and Takahashi et al. as this would allow an endoscope to be quickly formatted to read data from a camera head correctly without trial and error.

As to claim **31**, see the rejection of claim **30** and note that that Oshima further teaches the inputted data coming from the camera head (Column 29 lines 16-25).

14. Claims **32-33** are rejected under 35 U.S.C. 103(a) as being unpatentable over US 6,449,007 (Yokoyama) in view of US 6,870,566 (Koide et al.) and US 6,753,901 (Takahashi et al.) as applied to claim **25** further in view of US 6,836,290 (Chung et al.).

What Yokoyama, Koide et al. and Takahashi et al. teach has been discussed above. What they don't teach is digital serial receivers and drivers using LVDS as the means for communicating between the camera head and the CCU. However, as

discussed in the rejection of claims **7-14** above, Chung et al. teaches using digital serial drivers and receivers utilizing LVDS to communicate between an imager and an image processor (Column 2 lines 27-37).

15. Claims **34** and **36** are rejected under 35 U.S.C. 103(a) as being unpatentable over US 6,870,566 (Koide et al.) in view of US 6,753,901 (Takahashi et al.).

As to claim **34**, Koide et al. teaches a video imaging system (11 and 12, see Fig. 1) comprising: a camera control unit 12 for processing a digital image signal; a cable, connected to said camera control unit, for transmitting the digital image signal to said camera control unit (although it is not shown there must be a connection between 11 and 12); and a camera head 11, connected to said cable, for providing the digital image signal, said camera head including: an imager 102, for generating a digital image signal (CCD 102 generates an analog image that is converted to digital by a converter 103).

What Koide et al. does not teach that the camera head includes a serializer, however Takahashi et al. teaches an endoscopic imaging system where the video signal is passed through a serializer 26 (see Fig. 2) before being passed on to a display device. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to have included a serializer in the camera head of Koide et al. as this would allow for the use of a minimum number of conductors for passing the signal from the camera head to the camera control unit and would thus allow for the cable connecting the two to be made smaller and therefore further easing the discomfort of a person on which the endoscope is being used.

As to claim **36**, see the rejection of claim **34** and note that Koide et al. further teaches the video imaging device of claim **34** wherein said camera head 11 comprises a processor 104.

16. Claim **35** is rejected under 35 U.S.C. 103(a) as being unpatentable over US 6,870,566 (Koide et al.) in view of US 6,753,901 (Takahashi et al.) further in view of US 6,573,931 (Horii et al.).

As to claims **35,** see the rejection of claims **34** and note that what Koide et al. does not teach is a multiplexer contained in a camera head which transmits a multiplexed signal including image data and control data. However, Horii et al. teaches a camera head 150 containing a multiplexer 115 for transmitting a multiplexed signal containing image data and control data (Column 2 lines 1-5).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to have added the multiplexer taught by Horii et al. to the video imaging system taught by Koide et al. in view of Takahashi et al. as this would allow for using less wires and would allow for a smaller cable.

17. Claim **37-39** are rejected under 35 U.S.C. 103(a) as being unpatentable over US 6,870,566 (Koide et al.) in view of US 6,753,901 (Takahashi et al.) further in view of US 6,638,212 (Oshima).

As to claim **37**, see the rejections of claim **36** and note that what Koide et al. and

Takahashi et al. do not teach is a memory device, accessible by said processor, containing camera head information. However, Oshima teaches a non-volatile memory 20 contained in camera head 2 and accessible by processor 21 containing camera head information (Column 6 lines 60-63).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to have added a memory containing camera head information to the camera head taught by Koide et al. in view of Takahashi et al. as this would allow the make, model, number of times used and other such information to be easily accessed by a CCU which would allow the settings to be automatically set for the specific head being used.

As to claim **38**, see the rejection of claim **34** and note that what Koide et al. in view of Takahashi et al. does not teach an inputting data to format the camera control unit. However, Oshima teaches formatting a CCU according to data inputted from a camera head (Column 29 lines 16-25). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to have formatted a CCU using data inputted from an outside source such as a camera head as this would allow the settings to optimized for the camera head being used and would eliminate the need for a user to input all of the settings every time a different camera head is used which would save time.

As to claim **39,** see the rejection of claim **38** and note that Oshima teaches the

inputted data coming from the camera head (Column 29 lines 16-25).

18. Claims **40** and **41** are rejected under 35 U.S.C. 103(a) as being unpatentable over US 6,870,566 (Koide et al.) in view of US 6,753,901 (Takahashi et al.) further in view of US 6,836,290 (Chung et al.).

Koide et al. and Takahashi et al. do not teach using serial drivers and receivers utilizing LVDS as the means for transmitting signals. However, Chung et al. teaches sending signals with a digital serial driver 54 on an imager 50 to a digital serial receiver 56 in an image processor 52 using LVDS. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used digital serial drivers and receivers utilizing LVDS to transmit signals from the camera head to the CCU as LVDS is resistant to EMI and is a low power method of sending signals.

Conclusion

19. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US 6,975,351 (Ikeda et al.).

20. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dillon Durnford-Geszvain whose telephone number is (571) 272-2829. The examiner can normally be reached on Monday through Friday 8 am to 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ngoc-Yen Vu can be reached on (571) 272-7320. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Dillon Durnford-Geszvain 2/2/2007

NGOC-YEN VU
SUPERVISORY PATENT EXAMINER